August 9, 2018

Mr. Jason Canterbury
FPS Environmental Manager
The Chemours Company
Washington Works
8480 DuPont Road
Washington, West Virginia 26181
e-mail: jason.canterbury@chemours.com

RE: Change Order for Additional Source Emission Testing Services
FILE: 32619/*CRM51274*

Dear **Jason**:

O'Brien & Gere (OBG) is pleased to provide The Chemours Company (Chemours) with this change order to conduct additional source emission testing at its Washington Works facility located in Washington, West Virginia. OBG is aware that as part of a Consent Order, Chemours is required to demonstrate the removal efficiency of C3 Dimer Acid in multiple stack and emission locations using mass balance calculations. It is OBG's understanding that Chemours is looking to compare their mass balance calculations with actual field sampling data. Per telephone conversations on July 24, 2018, testing services are being modified to include PFOA and Fluoroether. Costs include the testing of multiple emissions stacks, both influent and effluent.

SCOPE OF SERVICES

SOURCE EMISSION TESTING

Source emission testing will be conducted at the inlet and outlet of two process scrubbers (PTFE and PFA), the B-124 Tank Exhaust, the Dispersion Storage Tanks Vent (single source) and the exhaust stacks serving the Line 2 and Line 3 coagulators to evaluate emissions of the following pollutants:

- C3 Dimer Acid (HFPO-DA)
- Perfluorinated Octanoic Acid (PFOA)
- Fluoroether (E-1)

Three test runs will be conducted simultaneously at the inlet and outlet of each scrubber during a single process operating condition. Test runs will be approximately 60 minutes in duration. Duplicate samples will be collected at the Line 2 and Line 3 coagulator stacks, the Dispersion Storage Tanks Vent and B-124 Tank Exhaust. Test runs at these locations will be approximately 240 minutes in duration.

A summary of the test program is provided in the table on the following page.

Unit	Test Parameter	No. of Test Runs[a]	Test Run Duration
PTFE Scrubber Inlet & Outlet	HFPO-DA, PFOA, E-1	3	60 minutes
PFA Scrubber Inlet & Outlet	HFPO-DA, PFOA, E-1	3	60 minutes
Line 2 Coagulator	HFPO-DA, PFOA, E-1	2	240 minutes
Line 3 Coagulator	HFPO-DA, PFOA, E-1	2	240 minutes
B-124 Tank Exhaust	HFPO-DA, PFOA	2	240 minutes
Dispersion Storage Tanks Vent	HFPO-DA, PFOA	2	240 minutes

[a]HFPO-DA and PFOA will be evaluated using a single sample train. A separate sample train will be utilized to evaluate E-1 emissions

HFPO-DA and PFOA emissions will be evaluated in accordance with a modified USEPA Method 0010 sample train. E-1 emissions will be evaluated in accordance with a modified USEPA Method 18 midget impinge sample train. Collected HFPO-DA and PFOA samples will be analyzed in accordance with SW-846 Method 3542 using liquid chromatography and dual mass spectroscopy. E-1 samples will be analyzed in accordance with SW-846 Method 8260 using gas chromatography/mass spectroscopy.

In conjunction with each test run, exhaust gas velocity will be evaluated in accordance with USEPA Methods 1 and 2. Exhaust gas oxygen (O_2) and carbon dioxide (CO_2) levels will be evaluated in accordance with USEPA Method 3 (Fyrite apparatus). Exhaust gas moisture content will be evaluated in accordance with USEPA Method 4 procedures. These data will be used to derive pollutant mass emission rates from measured concentrations.

SOURCE TEST REPORTS

Analytical test results will be made available approximately three weeks following completion of the field work. A draft test report summarizing the test results will be prepared and submitted to Chemours approximately four weeks following completion of the field effort. The report will contain a summary of the testing program, process operating data (provided by Chemours), test methods, equipment calibration data, laboratory analytical data, field data, calculations, and test results. Three copies of the final bound report, along with an electronic copy, will be submitted to Chemours within one week following receipt of your comments.

FACILITY REQUIREMENTS

The facility will be responsible for the following:

- one 110-volt, 20-amp circuit within 100 feet of the test locations
- monitoring and recording of required process operating data
- appropriate test locations including test ports
- safe access to test locations to include a test platform, man-lift and/or scaffolding
- required process sampling and analysis (if any)
- loosening of test port caps and cleaning of all test ports (if necessary)
- supplied air lines for respirators

PROJECT FEE AND TERMS

OBG proposes to conduct the source emission testing program outlined above on a lump sum, fixed fee basis. Similar to previous testing at the Washington Works facility, TestAmerica will be providing on-site consulting services, which have been included as part of the lab fees shown below. The fees for project labor/project expenses and analytical costs/consulting fees are provided separately below.

Project Labor, Miscellaneous Expenses, and Per Diem Costs	$80,500
Laboratory Analytical Fee and On-Site Support from TestAmerica	$161,700
Total Project Fee	**$242,200**

These fees are based on a single mobilization to the facility and the anticipated field schedule provided below.

Day of Week	Activity	Hours on-site
Sunday	Travel	**NA**
Monday	Review site safety procedures and setup test equipment on PFA Scrubber Inlet and Outlet.	**10**
Tuesday	Conduct three test runs for HFPO-DA, PFOA and E-1 at PFA Scrubber Inlet and Outlet. Move equipment to Line 2 and Line 3 Coagulator Stacks.	**13**
Wednesday	Conduct two test runs for HFPO-DA, PFOA and E-1 at Line 2 and Line 3 Coagulator Stacks. Move equipment to B-124 Tank Exhaust and Dispersion Storage Tanks Vent.	**13**
Thursday	Conduct two test runs for HFPO-DA and PFOA at B-124 Tank Exhaust and Dispersion Storage Tanks Vent. Move equipment to PTFE Scrubber Inlet and Outlet.	**12**
Friday	Conduct three test runs for HFPO-DA, PFOA and E-1 at PTFE Scrubber Inlet and Outlet. Tear down equipment and demobilize.	**13**

Additional mobilizations to the facility, hours on-site due to process operating problems, or changes to the scope of services required by Chemours will result in additional fees. We propose to perform this project in accordance with the terms and conditions outlined in our original proposal, dated June 12, 2018 and in accordance with the currently issued PO 9900668023, issued June 15, 2018.

We look forward to continuing to work with you and Chemours on this project. If you have any questions regarding this change order, please do not hesitate to contact Chase at (513) 697-2035.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

Chase C. Forman, CPG
Project/Client Manager

O'BRIEN & GERE ENGINEERS, INC.

Matthew Traister, P.E.
Vice President

cc: Patrick Grady – OBG